



# UNITED STATES PATENT AND TRADEMARK OFFICE

*cel*

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,969	12/26/2001	Yoshikuni Miyata	1163-0382P	6023

2292 7590 06/23/2005

BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
----------

WILLIAMS, LAWRENCE B

ART UNIT	PAPER NUMBER
----------	--------------

2638

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/018,969

Applicant(s)

MIYATA ET AL.

Examiner

Lawrence B. Williams

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 26 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4-6 and 9 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 3,5,7-8, 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/26/2001.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

2. Claim 3 is objected to because of the following informalities: Examiner suggests applicant replace the phrase "metric of trellis" with metric of a trellis in line 4 of the claim.
3. Claim 5 is objected to because of the following informalities: Examiner suggests applicant replace the phrase "metric of trellis" with metric of a trellis in line 9 of the claim.
4. Claim 7 is objected to because of the following informalities: Examiner suggests applicant replace the phrase "metric of trellis" with metric of a trellis in line 4 of the claim.
5. Claim 10 is objected to because of the following informalities: Examiner suggests applicant replace the phrase "metric of trellis" with metric of a trellis in line 9 of the claim. Appropriate correction is required.

### ***Allowable Subject Matter***

6. Claims 1, 2, 4-6 and 9 are allowed.

7. Claims 3, 5, 7-8, 10 would be allowable if rewritten to overcome claim objections listed above.

8. The following is a statement of reasons for the indication of allowable subject matter: the instant application discloses a demodulation method and apparatus. A search of prior art records has failed to disclose a demodulation method comprising “a coset estimation step for estimating the low-order information bit based on the log-likelihood ratio of the low-order information bit calculated by said log-likelihood ratio calculation step, estimating the parity bit based on the log-likelihood ratio of the parity bit calculated by said log-likelihood ratio calculation steps so as to estimate a coset based on the low-order information bit and the parity bit” nor does the prior art teach a demodulation apparatus comprising “a coset estimation means for estimating the low-order information bit based on the log-likelihood ratio of the low-order information bit calculated by said log-likelihood ratio calculation step, estimating the parity bit based on the log-likelihood ratio of the parity bit calculated by said log-likelihood ratio calculation means so as to estimate a coset based on the low-order information bit and the parity bit” along with the remaining limitations of claims 1 and 6.

### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Shaikh discloses in US Patent 6,594,319 B1 Apparatus And Method For Determining

Art Unit: 2634

The Closest Coset Points In A Trellis Decoder.

b.) Gelblum et al. discloses in US Patent 6,088,387 Multi-Channel Parallel/Serial Cocncatenated Convolutional Codes And Trellis Coded Modulation Encoder/Decoder.

c.) Gerlach et al. discloses in US Patent 6,499,128 B1 Iterated Soft-Decision Decoding Of Block Codes.

d.) Lee et al. discloses in US Patent 6,289,486 B1 Adaptive Channel Encoding Method And Device.

10. This application is in condition for allowance except for the following formal matters:

a.) Claim objections as noted above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2634

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw

June 11, 2005

  
**CHIEH M. FAN**  
**PRIMARY EXAMINER**